

## **Remarks**

Claims 1 – 4, 8 – 16, 19 and 20 are pending in this application. No amendments to the claims are made in this paper. Applicants respectfully submit that the pending claims are allowable for at least the following reasons.

### **Claim Rejection Under 35 U.S.C. § 103 Should Be Withdrawn**

On page 3 of the Office Action, claims 1 – 4, 8 – 16, 19 and 20 stand rejected over U.S. Patent No. 5,843,987 to Rajagopalan *et al.* (“Rajagopalan”) in view of U.S. Patent No. 5,635,215 to Boschetti *et al.* (“Boschetti”). The Examiner alleges that it would have been obvious to one of ordinary skill in the art at the time the invention was made to coat Rajagopalan's ellagic acid compositions for the treatment of Gastroesophageal Reflux Disease (GERD) with Boschetti's cell adhesion agents (*e.g.*, collagen and glucosaminoglycans) to arrive at the biocompatible hydrophilic microparticles that are used in the claimed method for treating GERD. Applicants respectfully disagree with the Examiner's allegation.

It is well settled that the Patent Office bears the burden of establishing a *prima facie* case of obviousness under 35 U.S.C. § 103. *In re Deuel*, 51 F.3d 1552, 1557 (Fed. Cir. 1995); *In re Rijckaert*, 9 F.3d 1531, 1532 (Fed. Cir. 1993). To establish a *prima facie* case of obviousness, the Patent Office must first show that the prior art suggested to those of ordinary skill in the art that they should carry out the claimed process. Second, it must show that the prior art would have provided one of ordinary skill in the art with a reasonable expectation of success. Both the suggestion and the reasonable expectation of success must be adequately founded in the prior art and not in an applicant's disclosure. Third, the Patent Office must show that the prior art teaches or suggests all the claim limitations. *Manual of Patent Examination and Procedure* (MPEP) § 2143; *In re Vaeck*, 20 U.S.P.Q.2d 1438, 1442 (Fed. Cir. 1991). These criteria must be satisfied with factual and objective evidence found in the prior art: an examiner's conclusory statement cannot form a basis for a *prima facie* case of obviousness. *In re Sang-Su Lee*, 277 F.3d 1338, 1343-4 (Fed. Cir. 2002).

Thus, when conducting an analysis under 35 U.S.C. § 103(a), an Examiner “must step backward in time and into the shoes worn by the hypothetical ‘person of ordinary skill in the art’ when the invention was unknown and just before it was made.” MPEP §2142. This is important, as “impermissible hindsight must be avoided and the legal conclusion must be reached on the basis of the facts gleaned from the prior art.” *Id.* Consequently, when

determining whether or not a claimed invention is obvious, one must cast his/her “mind back to the time of invention, to consider the thinking of one of ordinary skill in the art, guided only by the prior art references and the then-accepted wisdom in the field.” *In re Dembiczak*, 175 F.3d 994, 999 (Fed. Cir. 1999).

According to the Examiner, it would have been obvious to one of ordinary skill in the art at the time the invention was made to coat Rajagopalan's ellagic acid compositions for the treatment of GERD with Boschetti's cell adhesion agents (*e.g.*, collagen and glucosaminoglycans). Office Action, pages 4-5. Further, the Examiner alleges that, pursuant to Rajagopalan's teachings, it would have been obvious to one of ordinary skill in the pharmaceutical art to administer such compositions directly to the walls of the lower esophageal sphincter or diaphragm, thereby effecting tissue bulking, because Rajagopalan teaches the administration of his compositions into the GI tract for the treatment of GERD. *Id.* at page 5. Applicants respectfully disagree with the Examiner's allegations that, when combined, Rajagopalan and Boschetti suggest the claimed invention.

First, there is nothing in the cited art that would suggest to those of ordinary skill in the art that they should treat GERD by administering Rajagopalan's ellagic acid compositions directly to the lower esophageal sphincter or diaphragm, thereby effecting tissue bulking at those sites—much less that if they tried, that it would have a reasonable expectation of actually working (*vide infra*). Applicants point out that Rajagopalan's formulations are designed to disintegrate in the GI tract, thereby releasing ellagic acid, the active ingredient, in the tract. *See* Rajagopalan, column 5, lines 6 – 9. Rajagopalan's formulations would therefore not effect tissue bulking in the GI tract, let alone specifically at the lower esophageal sphincter or diaphragm. Consequently, Rajagopalan's disclosure does not suggest the invention, which is directed to a method of treating GERD by bulking up the tissue specifically at the lower esophageal sphincter or diaphragm, as illustrated in Fig. 1 in the Specification.

Further, contrary to the Examiner's assertions, there is nothing in the cited art that would suggest to those of ordinary skill in the art to coat Rajagopalan's formulations with collagen, pursuant to the teachings of Boschetti. Boschetti discloses a microsphere comprising a hydrophilic acrylic copolymer that may be coated with a cell adhesion promoter, if desired, and uses those microspheres for embolization, *i.e.*, vascular occlusion. Boschetti,

column 1, lines 9 – 10, and lines 46 – 48. The skilled artisan would recognize that occluding vessels involves different considerations and techniques than those involved in tissue bulking for the treatment of GERD. Also, while the microspheres that Boschetti uses may be coated with a cell adhesion promoter as a result of their chemical characteristics (*see* column 2, lines 46 – 52, where the adhesion agent is chemically bound to the microsphere), Rajagopalan's formulations are not suited for coating with cell adhesion promoters, such as collagen. Finally, coating Rajagopalan's formulations with anything would contravene the purpose of Rajagopalan's formulations which is to deliver ellagic acid to the GI tract, thereby treating GERD. Thus, there is no suggestion or motivation in the art cited, and the Examiner has not provided *any* factual or objective evidence from the cited art, that one of ordinary skill in the art would be motivated to (i) coat Rajagopalan's formulations with a cell adhesion promoter and (ii) administer such coated formulations directly to the lower esophageal sphincter or diaphragm thereby treating GERD via tissue bulking, as presently claimed.

Second, the cited art would not have provided those of ordinary skill in the art with any expectation of successfully obtaining the claimed invention. As Applicants point out above, Rajagopalan's formulations are intended to disintegrate in the GI tract, thereby releasing ellagic acid into the GI tract. In other words, Rajagopalan's formulations would not effect tissue bulking in the GI tract with or without a coating of collagen, let alone specifically at the lower esophageal sphincter or diaphragm. Consequently, Rajagopalan actually *teaches away* from the claimed invention. Because Rajagopalan teaches away from the claimed invention, Applicants respectfully submit that the rejection of the claims over Rajagopalan and Boschetti is based on the use of impermissible hindsight and should be withdrawn. The rejection should also be withdrawn because the Examiner has not set forth *any* factual or objective evidence as to why the skilled artisan would have the expectation of success in treating GERD by using Rajagopalan's compositions, coated with collagen, and administered directly to the lower esophageal sphincter or diaphragm.

Applicants respectfully submit that the Examiner has failed to establish a *prima facie* case of obviousness against the claimed invention because the art cited (i) does not suggest to those of ordinary skill in the art that they should treat GERD by the claimed method and (ii) does not provide one of ordinary skill in the art with a reasonable expectation

of success. Therefore, Applicants respectfully request reconsideration and withdrawal of the rejection under 35 U.S.C. § 103(a).

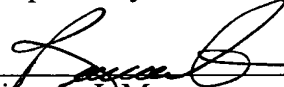
Based on the foregoing arguments, Applicants respectfully submit that all pending claims are now in condition for allowance.

No fee is believed due for this response, except the required fee for the petition for extension of time submitted herewith. Should any additional fees be required, please charge such fees to Jones Day Deposit Account No. 50-3013.

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Respectfully submitted,

  
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